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| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/823,142 | RAISSINIA ET AL. | |
| | Examiner | Art Unit | |
| | Anh-Vu H. Ly | 2667 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed September 22, 2005.
2. ☒ The allowed claim(s) is/are 1, 3-8, 10-16, and 18-29 renumbered as 1-26 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Cindy S. Kaplan on November 30, 2005.

The application has been amended as follows:

In The Claims

1. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, a method for operating a subscriber unit, said method comprising:

transmitting data to a central access point during a directed grant slot allocated to said subscriber unit;

determining if said transmitted data qualifies for ARQ; and

if said transmitted data qualifies for ARQ;

monitoring MAP messages broadcast by said central access point to detect acknowledgement of receipt of said data transmitted during said directed grant slot; and

if no acknowledgement of receipt of said data transmitted during said directed grant slot is indicated by said MAP messages, retransmitting said data;

wherein non-receipt is indicated by said MAP messages if a MAP message is received with a timestamp later than said directed grand slot and no acknowledgement is received.

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2. (Canceled).

5. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, a method for operating a central access point, said method comprising:

receiving data from a subscriber unit during a directed grant slot allocated to said subscriber unit; and

broadcasting a MAP message including an acknowledgment of receipt of said data received during said directed grant slot, as well as a time stamp indicative of a latest time slot for which successful receipt of a data packet during that time slot, if said directed grant slot is allocated to data that qualifies for ARQ.

8. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, apparatus for operating a subscriber unit, said apparatus comprising:

a MAC layer processor that transmits data to a central access point during a directed grant slot allocated to said subscriber unit, monitors MAP messages broadcast by said central access point to detect acknowledgment of receipt of said data transmitted during said directed grant slot, and determines if said transmitted data qualifies for ARQ; and

an ARQ buffer that stores said data transmitted during said directed grant slot after it is transmitted if said transmitted data qualifies for ARQ; and

wherein if no acknowledgment of receipt is indicated by said MAP messages, said MAC layer processor retrieves said data from said ARQ buffer and retransmits said data;

wherein non-receipt is indicated by said MAP messages if a MAP message is received with a timestamp later than said directed grant slot and no acknowledgement is received.

9. (Canceled).

11. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, apparatus for operating a central access point, said apparatus comprising:

a physical layer transceiver that exchanges information signals with a subscriber unit via a transmission medium; and

a MAC layer processor that receives data during a directed grant slot allocated to said subscriber unit via said physical layer transceiver and that broadcasts a MAP message including an acknowledgment of receipt of said data received during said directed grant slot, as well as a time stamp indicative of a latest time slot for which successful receipt of a data packet during that time slot, if said directed grant slot is allocated to data that qualifies for ARQ.

14. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, apparatus for operating a subscriber unit, said apparatus comprising:

means for transmitting data to a central access point during a directed grant slot allocated to said subscriber unit;

means for determining if said transmitted data qualifies for ARQ; and

means for monitoring MAP messages broadcast by said central access point to detect acknowledgment of receipt of said data transmitted during said directed grant slot; and

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means for, if no acknowledgment of receipt is indicated by said MAP messages, retransmitting said data, if said transmitted data qualifies for ARQ;

wherein non-receipt is indicated by said MAP messages if a MAP message is received with a timestamp later than said directed grant slot and no acknowledgement is received.

15. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, apparatus for operating a central access point, said apparatus comprising:

means for receiving data from a subscriber unit during a directed grant slot allocated to said subscriber unit; and

means for broadcasting a MAP message including an acknowledgment of receipt of said data received during said directed grant slot, as well as a time stamp indicative of a latest time slot for which successful receipt of a data packet during that time slot, if said directed grant slot is allocated to data that qualifies for ARQ.

16. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, a computer program product for operating a subscriber unit, said computer program product comprising:

code that causes transmission of data to a central access point during a directed grant slot allocated to said subscriber unit;

code that determines if said transmitted data qualifies for ARQ;

code that causes monitoring of MAP messages broadcast by said central access point to detect acknowledgment of receipt of said data transmitted during said directed grant slot;

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code that causes, if no acknowledgment of receipt is indicated by said MAP messages, retransmission of said data if said transmitted data qualifies for ARQ; and

a computer readable medium that stores the codes, wherein non-receipt is indicated by said MAP messages if a MAP message is received with a timestamp later than said directed grant slot and no acknowledgment is received.

17. (Canceled).

20. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, a computer program product for operating a central access point, said computer program product comprising:

code that causes reception of data from a subscriber unit during a directed grant slot allocated to said subscriber unit; and

code that causes broadcasting a MAP message including an acknowledgment of receipt of said data received during said directed grant slot, as well as a time stamp indicative of a latest time slot for which successful receipt of a data packet during that time slot, if said directed grant slot is allocated to data that qualifies for ARQ; and

a computer-readable storage medium that stores the codes.

23. (Currently Amended) In a point to multipoint network operating according to a DOCSIS-based MAC protocol, a method for operating a subscriber unit, said method comprising:

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transmitting an access request to a central access point on a request/data slot, the access request being arranged to request access to transmit data upstream;

receiving a first MAP message in response to the access request, the first MAP message being arranged to allocate a directed grant slot to the subscriber unit, the directed grant slot being arranged such that substantially only the subscriber unit may transmit during the directed grant slot;

transmitting the data to the central access point during the directed grant slot allocated to the subscriber unit;

determining if said transmitted data qualifies for ARQ; and

if said transmitted data qualifies for ARQ;

monitoring a plurality of MAP messages broadcast by the central access point to detect acknowledgment of receipt of the data transmitted to the central access point during the directed grant slot; and

when no acknowledgment of receipt of the data transmitted during the directed grant slot is indicated by the plurality of MAP messages, retransmitting the data transmitted to the central access point during the directed grant slot;

wherein non-receipt is indicated by said MAP messages if a MAP message is received with a timestamp later than said directed grand slot and no acknowledgement is received.

Allowable Subject Matter

2. Claims 1, 3-8, 10-16, and 18-29 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art does not teach or fairly suggest determining and monitoring MAP messages, according to a DOCSIS-based MAC protocol, if transmitted data qualifies for ARQ and wherein non-receipt is indicated by said MAP messages if a MAP message is received with a timestamp later than said directed grant slot and no acknowledgement is received, as specified in independent claims 1, 8, 14, 16, and 23.

The prior art does not teach or fairly suggest broadcasting a MAP message, according to a DOCSIS-based MAC protocol, including an acknowledgment of receipt of said data received during said directed grant slot, as well as a time stamp indicative of a latest time slot for which successful receipt of a data packet during that time slot, if said directed grant slot is allocated to data that qualifies for ARQ, as specified in independent claims 5, 11, 15, and 20.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vogel et al (US Patent No. 6,963,541 B1) discloses upstream transmission profiles for a DOCSIS or DOCSIS-like system.

Aramaki et al (US Pub 2005/0204252 A1) discloses an ARQ transmission-reception apparatus.


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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H. Ly whose telephone number is 571-272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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